

End in Sight

The 125th anniversary of the world's first automobile to feature an internal combustion engine is nearing its end. Birthday celebrations for Benz's patented motor vehicle were held throughout Germany and above all in Baden-Württemberg, home to its inventor. This was naturally taken as an occasion to showcase as many of the 50-odd replicas of this internal combusted engine-tricycle in existence the world over at various events related to Automobile Summer 2011—both en route and stationary. "Honor to whom honor is due" would be a befitting way to paraphrase this anniversary year if it was not for the bitter after-taste that is becoming increasingly prevalent and tainting the image of the internal combustion engine, which has come of age. It is not the experts alone who have long known that the days of this drive concept are numbered as someday, oil will inevitably become too precious to use as fuel. It is also no coincidence that all of the major auto manufacturers seeking to stay in business have begun to offer concepts for electric cars suitable for daily use, some of which are already being mass-produced. The electric car is thus possibly facing a bright future.

But what do we know about its past?

An Electrifying Story

Horst Schultz, director and founder of the AUTOVISION Museum, dedicated himself to the topic as early as ten years ago, not least because the beginning of the museum's construction was concurrent to his development of a concept for an electric car exhibition, which has remained an integral component of AUTOVISION to this very day. With electric cars dating as far back as 1899 on display, most visitors are absolutely astounded by their longevity. However, AUTOVISION's spectacular world premiere is now demonstrating that the birth of the electric vehicle dates back even farther. Entrepreneur and electrical engineer Horst Schultz spearheaded his well-oiled museum garage team to reconstruct what is really the world's first street-ready electric car, of which not a single one remains in existence. The project began by conducting research into what should be de facto considered the world's first electric car. In the summer of 1881, an attempt was made by Frenchman Gustav Trouvé, who fitted a Coventry tricycle (a bicycle with a third wheel for support) with an electric engine for the inauguration of the Paris Electricity Trade Show. However, the battery and speed control system were more a source of amusement than a manifestation of roadworthiness. Cable winches were used to dip lead plates into the acid of the open batteries. With some luck, the immersion depth determined whether the tricycle went faster or slower. A few months later, however, the scientists William Ayrton and John Perry presented an electric vehicle in England, which was to go down in history as the world's first roadworthy electric car to this very day. The team at AUTOVISION set its sights on this very vehicle, in order to reverse engineer it.

From Tricycle to Automobile

As Carl Benz's patented motorcar, which was launched a full five years later, Ayrton & Perry's electric vehicle also had three wheels. The reason for this is that both Benz and the two scientists based their motor vehicle projects on tricycles. The basis used by Ayrton & Perry was the Starley tricycle, which had just been launched. Therefore, the first step taken by AUTOVISION to reverse engineer the world's first electric car was to follow in the two scientists' footsteps. But the search for a 130-year-old tricycle was no easy feat. Following a lengthy hunt, however, the team found the much sought-after vehicle, which it purchased from its owner after a series of negotiations. To spare this original—and thus extremely valuable—specimen the toils of conversion to an electric vehicle, during the planning phase, the team had decided to create a replica to scale. This laid the groundwork for the "electrification" stage and begs the question: "What electrical devices existed in 1881?"

Marketing Sees the Light

Despite its reach of 40 kilometers and top speed of 14 km/h, the main reason for Ayrton & Perry to present their electric vehicle was not to prove that they had designed the world's first electric car, but to use it as a mobile billboard for advertising new inventions in the

fields of electricity and electronics at trade shows held in Europe's major cities. It was the electrical measuring devices designed by the two Englishmen—a voltmeter and an amperemeter—along with Edison's light bulbs, which had been patented a year earlier and had only just become capable of remaining alight permanently, that turned the electric tricycle into a veritable high-tech vehicle. The electric motor did not occupy a lot of space back then, either, and was inconspicuously located on the underside of a wooden panel forming the seat of a comfortable wooden armchair with a leather cushion and the baseplate of a speed-controlling battery-regulating switch, which was making its debut as well. The more conspicuous—and much more difficult—component for the AUTOVISION workshop team to reverse engineer was the big, fixed roller chain that transmits the power generated by the electric motor to the huge front wheels. The power supply units (rechargeable batteries arranged in series) were mounted on a second wooden panel, which was basically the floor. End of story. This was all the technology one needed back then in order to become “automobile.”

AUTOVISION Time Machine

The AUTOVISION Museum spent about a year conducting research on and reverse engineering the world's first electric car under Horst Schultz until it was brought back to life. This affords the whole world the opportunity to experience the automotive locomotion options available 130 years ago in the flesh, which existed a full five years before the actual invention of the motorcar by Carl Benz and were much more comfortable and virtually noise-free.

Captions:

- New measuring equipment such as the amperemeter and the voltmeter were implemented in the electric vehicle developed by Ayrton & Perry in a very promotionally effective way.
- At the time, this kind of tricycle—exemplified by an original “Starley” brand specimen here—served as a platform for building motorized concept vehicles.
- One of only two existing original drawings dating back to 1881 showing the design of the Ayrton & Perry electric vehicle.
- After 130 years, the world's first electric car is now roadworthy again and can be marveled at in AUTOVISION's EV Exhibition from now on.